

### **REMARKS**

The present submission is provided in order to present amendments subsequent to the Advisory Action of June 2, 2009. This submission is responsive to the Final Rejection of March 20, 2009, in which the outstanding issues were rejections under 35 U.S.C. 112, 102 and 103. Reconsideration of each of these issues is again respectfully requested in view of the following discussion.

Claims 1-6 and 8-31 have been rejected under 35 U.S.C. 112, second paragraph. The Examiner is thanked for noting the typographical error in the claim, which has been corrected. It is moreover noted that an additional typographical error has been corrected in a claim, in which the number “1000” was incorrectly typed with an additional 0. It is evident from the original claims, and from the specification at page 1, line 30, that this was a typographical error.

Reconsideration of the rejection under 35 U.S.C. 112 is respectfully requested.

### **Rejections Under 35 U.S.C. 102 and 103**

Claims 1-6 and 8-31 have been rejected under 35 U.S.C. 102(b), or in the alternative 103, over Allen (WO ‘843). Reconsideration of this rejection is respectfully requested. It is argued, at page 2 of the office action, that Allen discloses polytriarylaminines with fractions having number average molecular weights “above and below 5000.” The office action notes table 1, example 2, at page 14 of the reference. This table discloses three solids, having molecular weights of 3100, 2900 and 7000. With the clarification of claim 1 to address the typographical error in the molecular weight, it can be seen that this disclosure does not teach, much less suggest, a composition with a first organic semiconducting compound having a number average molecular weight of *at least 5000* **and** a second semiconducting compound having a number average molecular weight of 1000 or less, in the proportions 70:30 – 30:70, wherein the high  $M_n$  compound has a mobility of at least  $10^{-4}$   $\text{cm}^2/\text{Vs}$ .

The high  $M_n$  fractions 1B2 and 1B in Table 1 on page 14 of Allen do not have measurable charge carrier mobility. Moreover, Allen does not disclose any weight fraction having a mobility of at least  $10^{-4}$   $\text{cm}^2/\text{Vs}$ . Also, Allen does not disclose any composition containing the above-mentioned

high and low  $M_n$  compounds in the proportions 70:30 – 30:70. In addition, it is not seen that the examples of Allen teach the use of these various materials in combination, as in the present claims. In fact, it can be seen from example 1, in which the materials in table 1 are produced, that solid 1A is used to produce solid 1B1, which in turn is used to produce solid 1B2. It is not seen that the combination of these materials and organic semiconductors used in combination is taught. Not only for the reasons above does Allen fail to teach the present claims, and thus does not anticipate them, but it is not seen that one of ordinary skill in the art would have any motivation, reason or direction to produce a combination such as that presently claimed, in view of the teachings of Allen.

Moreover, as additional evidence of non-obviousness, attention is directed to the present examples which show a highly unexpected improvement for the composition claimed. Tables 1 and 4 in examples 1 and 6 of the present application (see pages 16 and 19) show that, by mixing a high  $M_n$  semiconducting compound with a low  $M_n$  semiconducting compound, wherein the high  $M_n$  compound on its own has a charge carrier mobility  $\geq 10^{-4} \text{ cm}^2/\text{Vs}$ , and wherein the proportions of the two compounds are from 70:30 – 30:70, it is possible to obtain a composition with a charge carrier mobility that is *higher than the mobility of each component taken alone*. These results were completely surprising and could not be expected from the cited prior art references. Accordingly, withdrawal of the rejection under 35 U.S.C. 102/103 is respectfully requested.

Claims 1-6 and 8-31 have also been rejected under 35 U.S.C. 102(b) or in the alternative 103 over Allen (WO '537). Reconsideration of this rejection is also respectfully requested.

The Final Rejection cites table 8 at page 71 of the WO. Again, while this table appears to disclose various materials with different molecular weights, it is not seen that Allen '537 teaches the use of one material having molecular weight of at least 5000, and a second material having a molecular weight of 1000 or less in the proportions and with the charge mobility claimed. Accordingly, withdrawal of this rejection is also respectfully requested.

Finally, claims 1-3, 11, 14-17, 22, 24, 28 and 31 remain rejected under 35 U.S.C. 102(b) over Doi. Reconsideration of this rejection is again respectfully requested. It appears, from page 4 of the office action, that the present argument is that the polyfluorenes of Doi would meet the molecular weight requirements of the claims. However, the claims, as noted, require one material having a molecular weight of at least 5000, and a second material having a molecular weight of 1000 or less. It is again respectfully submitted that Doi does not teach the combination

of two such materials, in the proportions and with the charge mobility claimed, even if various polyfluorenes disclosed therein might have differing molecular weights. Accordingly, withdrawal of this rejection is also respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response to Deposit Account No. 13-3402.

Respectfully submitted,

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